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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/722,848

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Gerhard Karl Strauch

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06/01/2006

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EXAMINER

MACARTHUR, SYLVIA

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/722,848	Applicant(s) STRAUCH, GERHARD KARL	
	Examiner Sylvia R. MacArthur	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 5, 9, 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aschner (US 6,005,226) in view of Switky et al (USP 5,270,262).

Regarding claim 1: Aschner teaches rapid thermal processing (RTP) system with gas driven rotating substrate. The arrangement of Aschner comprises a support body (fixed base) and a rotating substrate holder which are formed as rings (interpreted as a bodies that surrounds the wafer as illustrated in Fig. 13a and 18b). The gas bearing and the rotary drive are formed by a means of gas flowing into the separating gap (see col4 lines 4-32) between support body and substrate holder from nozzles, see Figs. 4-7

Aschner fails to teach a ring bead projecting into a ring recess in the substrate holder.

Switky et al teaches a ring bead 15 between plates 11 and 14. The motivation to provide the ring bead of Switky et al is that ring beads provide a seal that precludes the entry of fluid in the joint between the rings for enhanced stability and maintaining of centering during processing. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide the apparatus of Aschner with the ring bead of Switky et al.

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Regarding claim 2: The rings rest on top of another in a self-centering fashion as illustrated in Figs. 4-7 of Aschner.

Regarding claims 4 and 5: Aschner teaches that the wafer is rotated by the rotating holder that supports the wafer only by the pin (needle-like protuberances).

Regarding claim 9: Aschner teaches that the substrate is radiation-heated from below through the rings, see Fig. 1

Regarding claim 10: Quartz is the material of construction according to col.4 line 57 of Aschner.

Regarding claim 12: This is a matter of intended use and is not given patentable weight although Aschner does teach the apparatus is used with RTP a heat treatment process.

3. Claims 6, 8, 11, 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aschner (US 6,005,226) in view of Switky et al (USP 5,270,262) as applied in claims above, in further view of White (WO 01/99257).

The teachings of Aschner in view of Switky et al were discussed above.

Aschner in view of Switky fails to teach the recitations of claim 6,8,10,11, and 13.

White discloses an arrangement comprising a support body (Fig. 3 Item 210) and a substrate holder (Fig. 3 Items 119, 115 and 111A), a gas bearing and a rotary drive being formed by means of gas flowing into a separating gap between the support body and substrate holder from nozzles (Fig. 4 Items 202 and 206); the support body and the substrate holder are formed as rings (Fig. 3 Items 119, 115, 113A and 210).

With respect to Claim 6: White discloses that the nozzles open out into grooves (Fig. 4 Item 206).

With respect to Claim 8: White discloses oppositely directed driving gas streams for

With respect to Claim 11: White discloses that the rotationally driven ring has a low heat absorption (Page 6 Lines 12-14).

With respect to Claim 13: White discloses a device having a support body (Fig. 3 Item 210) and a substrate holder (Fig. 3 Items 119, 115 and 113A) which is supported in a manner that it can be driven in rotation and on which a flat object (Fig. 3 Item 117) can be placed, it being possible to produce a gas cushion beneath the substrate holder by means of gas which emerges from nozzles which open out into a separating gap (Fig. 3 Item 111A) between the support body (Fig. 3 Item 210) and the holding body (Fig. 3 Items 119, 115 and 113A), on which gas cushion the substrate holder (Fig. 3 Item 111A) rests in such a manner that it is driven in rotation by directed gas streams, the support body (Fig. 3 Item 210) and the substrate holder are formed as rings (Fig. 3 Items 119, 115, 113A and 210).

4. Claim 7 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aschner or Sato in view of Switky et al in further view of White (WO 01/99257) as applied in claims 6,8,10,11, and 13-20, in further view of Frijlink (US 4,860,687).

The teachings of Aschner in view of Switky et al in further view of White were discussed above.

Aschner as modified Switky in further view of White obviates nozzles opening out into grooves as recited in claim 6 of the present invention. The modification does not teach or fairly suggest that those grooves are arcuate.

Additionally, White discloses an arrangement according to claim 1 (see above) in that the gas streams flowing in opposite directions alternate (Fig. 4 Items 202 and 206).

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Frijlink discloses an arrangement in which the gas streams are arcuate grooves (Fig. 5b Items 51a-51c). White and Frijlink and analogous art because they are from the same field of endeavor, namely gas driven substrate holder arrangements.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to form White's grooves as arcuate grooves in view of the teaching of Frijlink. The suggestion or motivation for doing so would have been to provide a force more closely aligned with the path of rotation of the substrate holder to more efficiently transfer the kinetic energy of the gas into kinetic energy of the substrate holder, and thus more efficiently rotate the substrate holder.

Therefore, it would have been obvious to make the grooves of White arcuate as taught by Frijlink.

Also, the change in shape was held to have been obvious by *In re Dailey*, 357 F. 2d 669, 149 (CCPA 1966) and the shape is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular shape was significant.

Response to Arguments

5. Applicant's arguments with respect to claims 1,2, and 4-20 have been considered but are moot in view of the new ground(s) of rejection. The prior art of Aschner in view of Switkey et al suggests the support body and the substrate holder formed as rings wherein the support body includes a ring bead which projects into a ring recess in the substrate holder as newly amended claims 1 and 13 recite.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sato et al (US 5,527,393) teaches a vapor-phase deposition apparatus wherein a

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support body 6 and support 4 (rotates) are formed as rings. Pins 11 are provided to support the wafer.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. The prior art by Switkey et al was introduced to teach a ring bead and was combined with teachings of Aschner et al to fairly suggest the claimed invention. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

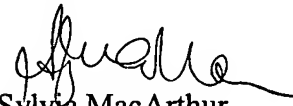
Conclusion


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the hours of 8:30 a.m. and 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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Patent Examiner
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May 30, 2006